Amendments to the claims:
This listing of claims will replace all prior versions and listings of claims in the application.

IN THE CLAIMS:

1. (Currently Amended) Lead substitute material for radiation protection purposes in the energy range of an X-ray tube having a voltage of from 60 to 140 kV, wherein for nominal overall lead equivalents of from 0.25 to 2.00 mm the lead substitute material comprises

from 12 to 22 wt.% of a silicone-based material,

from 1 to [[75]] 39 wt.% Sn or Sn compounds,

from ~~0 to 73~~ 16 to 60 wt.% W or W compounds, and

from ~~0 to 80~~ 16 to 60 wt.% Bi or Bi compounds.

2. (Currently Amended) Lead substitute material ~~according to claim 1,~~

~~wherein~~ for radiation protection purposes in the energy range of an X-ray tube having a voltage of from 60 to 140 kV, wherein for nominal overall lead equivalents of from 0.25 to 2.00 mm the lead substitute material comprises

from 12 to 22 wt.% of the silicone-based material,

from ~~1 to 39~~ 40 to 60 wt.% Sn or Sn compounds,

from ~~0 to 60~~ 7 to 15 wt.% W or W compounds and

from ~~0 to 60~~ 7 to 15 wt.% Bi or Bi compounds.

3. (Canceled)

4. (Canceled)

5. (Previously Presented) Lead substitute material according to claim 1, wherein the lead substitute material additionally comprises up to 40 wt.% of one or more of the following elements: Er, Ho, Dy, Tb, Gd, Eu, Sm and/or their compounds and/or CsI.

6. (Previously Presented) Lead substitute material according to claim 5, wherein the lead substitute material additionally comprises up to 20 wt.% of the elements and/or their compounds and/or CsI.

7. (Previously Presented) Lead substitute material according to claim 6, wherein the lead substitute material additionally comprises up to 8 wt.% of the elements and/or their compounds and/or CsI.

8. (Previously Presented) Lead substitute material according to claim 1, wherein the lead substitute material additionally comprises up to 40 wt.% of one or more of the following elements: Ta, Hf, Lu, Yb, Tm, Th, U and/or their compounds.

9. (Previously Presented) Lead substitute material according to claim 8, wherein the lead substitute material additionally comprises up to 20 wt.%

of the elements and/or their compounds.

10. (Previously Presented) Lead substitute material according to claim 9, wherein
the lead substitute material additionally comprises up to 8 wt.% of the elements and/or their compounds.

11. (Previously Presented) Lead substitute material for radiation protection purposes in the energy range of an X-ray tube having a voltage of from 60 to 90 kV according to claim 5, wherein
for nominal overall lead equivalents of from 0.25 to 0.6 mm the lead substitute material comprises
from 12 to 22 wt.% of the silicone-based material,
from 49 to 65 wt.% Sn or Sn compounds,
from 0 to 20 wt.% W or W compounds,
from 0 to 20 wt.% Bi or Bi compounds and
from 5 to 35 wt.% of one or more of the elements Gd, Eu, Sm and/or their compounds and/or CsI.

12. (Previously Presented) Lead substitute material according to claim 1, wherein
the silicone-based material comprises silicone rubber.

13. (Previously Presented) Lead substitute material according to claim 12, wherein
the silicone rubber comprises dimethyl silicone rubber, phenylmethyl silicone rubber, phenyl silicone rubber and polyvinyl silicone rubber.

14. (Previously Presented) Lead substitute material according to claim 1, wherein it comprises fillers and processing aids.

15. (Previously Presented) Lead substitute material according to claim 1, wherein
it comprises a structure of protective layers of different compositions.

16. (Previously Presented) Lead substitute material according to claim 15, wherein
it comprises a structure of at least two protective layers of different compositions which are separate or joined together, wherein the protective layer(s) more remote from the body comprise(s) predominantly the elements having a lower atomic number, or their compounds, and the protective layer(s) close to the body comprise(s) predominantly the elements having a higher atomic number, or their compounds.

17. (Previously Presented) Lead substitute material according to claim 15 wherein it comprises a structure of at least two protective layers of different

compositions which are separate or joined together, wherein at least in one layer at least 50% of the total weight consists of only one element from the group Sn, W and Bi or their compounds.

18. (Previously Presented) Lead substitute material according to claim 16, wherein

it comprises a structure of at least two protective layers of different compositions which are separate or joined together, wherein the protective layer(s) more remote from the body comprise(s) predominantly the elements or their compounds having a higher X-ray fluorescent yield, and the protective layer(s) close to the body comprise(s) the elements or their compounds having a lower X-ray fluorescent yield.

19. (Previously Presented) Lead substitute material according to claim 16, wherein

a weakly radioactive layer is embedded between two non-radioactive protective layers which are separate from or joined to the radioactive layer.

20. (Previously Presented) Lead substitute material according to claim 1, wherein

the metals or metal compounds are granular and their particle sizes exhibit a 50th percentile according to the following formula

$$D_{50} = \frac{d \cdot p}{10} mm$$

wherein

D_{50} represents the 50th percentile of the particle size distribution,

d represents the layer thickness in mm and

p represents the proportion by weight of the particular material component in the total weight,

and the 90th percentile of the particle size distribution $D_{90} \leq 2 \cdot D_{50}$.

21. (Previously Presented) Radiation protection clothing of lead substitute material according to claim 1.